

Risk Comparison

Comparison of Risks of Dying to Regulatory Allowable Risk Levels								
Risk Level	Risk of Death	Allowable Risk (Cancer Risk)						
		EPA 2000 Methodology	Washington Water Quality	Florida Proposed Water Quality	EPA Drinking Water	EPA Superfund & State Cleanups	Federal OSHA on Workplace Standards	US FDA on Dietary Supplement Safety
1 in 10 (1×10^{-1})	Death							N O R E G U L A T I O N
	Heart Disease (1 in 5)							
	Stroke (1 in 10)							
1 in 100 (1×10^{-2})	Auto accident (1 in 100)							
	Falls (1 in 200)							
	Cashier worker (1 in 250)							
1 in 1,000 (1×10^{-3})	Acrylamide in food (1 in 1,800)							
	Bike accident (1 in 5,000)							
1 in 10,000 (1×10^{-4})	Lightning (1 in 80,000)	Sub-populations (1 in 10,000)		Sub-populations (1 in 10,000)	Arsenic (5 in 10,000)	1 in 10,000		
	Asbestos (1 in 500,000)	1 in 100,000			EPA Drinking Water	EPA Superfund Range		
		General Population		Average population (1 in 1,000,000)		1 in 1,000,000		
1 in 100,000 (1×10^{-5})	Plane crash (1 in 11,000,000)	1 in 1,000,000	Sub-population (1 in 1,000,000)			No action needed		
1 in 1,000,000 (1×10^{-6})			General population (1 in 20,000,000)		Benzene (1 in 10,000,000)			
1 in 10,000,000 (1×10^{-7})								
1 in 100,000,000 (1×10^{-8})								

Decreasing Risk

Compounded Conservatism

Everyone has all of the following characteristics:

Parameter	National Default Value	Proposal for Washington	Proposal for Maine (Indian Lands)
Weighs...	80kg (176 lbs)	Same	Same
Every Day for 70 Years Drinks Water From the Same Location That is...	<ul style="list-style-type: none"> •2.4 L/day (2.5 quarts): •Unfiltered and Untreated <u>and</u> •From Surface Water (lakes, streams, etc.) <u>and</u> •Contaminated at the HHWQC Level 	Same	Same
<u>AND</u> Every Day for 70 Years Consumes Fish From the Same Location That Is ...	<ul style="list-style-type: none"> •22 g/day (.8 oz): •From Local Waters, Grocery Stores, Aquaculture, Foreign Countries (excluding marine) <u>and</u> •From Waters Contaminated at the HHWQC Level <u>and</u> •Fish are Contaminated with Pollutants from the Water to the Maximum Extent Possible 	Same Except 175 (.39 lbs)	Same Except 286 (.63 lbs) (a rate unsuppressed by availability or safety concerns)

Policy Issues

Impact of EPA Choosing 10^{-6} v. 10^{-5} v. 10^{-4} Excess Lifetime Cancer Risk Level

" 10^{-6} means the "risk of developing cancer...would be one in a million on top of the background risk of developing cancer from all other exposures."
(emphasis added)*

If Everyone has ALL of the Equation Characteristics:

Background Risk of Developing Cancer	Theoretical Risk with 10^{-4}	Theoretical Risk with 10^{-5}	Theoretical Risk with 10^{-6}
4 in 10, or .40000	.4001	.40001	.400001

* EPA Proposed Criteria for Maine, 81 *Fed. Reg.* 23243 (4/20/16)